

PCT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 03 March 2000 (03.03.00)	Applicant's or agent's file reference CM1831LM/KL
International application No. PCT/US99/16078	Priority date (day/month/year) 20 July 1998 (20.07.98)
International filing date (day/month/year) 16 July 1999 (16.07.99)	
Applicant BOTTOMLEY, Ian et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

24 January 2000 (24.01.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
 34, chemin des Colombettes
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Antonia Muller

Telephone No.: (41-22) 338.83.38

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference CM1831LM/KL	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US 99/ 16078	International filing date (day/month/year) 16/07/1999	(Earliest) Priority Date (day/month/year) 20/07/1998
Applicant THE PROCTER & GAMBLE COMPANY et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☒ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 99/16078

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G05D1/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G05D A47L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 35 36 974 A (H.-R. KNEPPER) 23 April 1987 (1987-04-23)	1-4, 9-11
Y	column 7, line 51 - column 8, line 47; figures 3A, 3B	5-8
Y	SEKIGUCHI M ET AL: "BEHAVIOR CONTROL FOR A MOBILE ROBOT BY MULTI-HIERARCHICAL NEURAL NETWORK" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMATION, SCOTTSDALE, MAY 15 - 19, 1989, vol. 3, 15 May 1989 (1989-05-15), pages 1578-1583, XP000044339 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS the whole document	5-8

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

29 October 1999

Date of mailing of the international search report

09/11/1999

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Goetz, P

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/US 99/16078

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 622 236 A (Y.AZUMI ET AL.) 22 April 1997 (1997-04-22) column 2, line 52 -column 5, line 16; figures 1-3	1,3,4, 9-11
A	EP 0 786 229 A (PENGUIN WAX CO.) 30 July 1997 (1997-07-30) abstract; figures 1-22	1,9
A	US 5 613 261 A (KAWAKAMI ET AL.) 25 March 1997 (1997-03-25) claims 1,2; figures 1-10	1,4
A	HOLENSTEIN A A ET AL: "COLLISION AVOIDANCE IN A BEHAVIOR-BASED MOBILE ROBOT DESIGN" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON ROBOTICS AND AUTOMAT, SACRAMENTO, APR. 9 - 11, 1991, vol. 1, no. CONF. 7, 9 April 1991 (1991-04-09), pages 898-903, XP000218429 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS abstract; figures 1,3,6	2
A	FEI YUE WANG ET AL: "A PETRI-NET COORDINATION MODEL FOR AN INTELLIGENT MOBILE ROBOT" IEEE TRANSACTIONS ON SYSTEMS, MAN AND CYBERNETICS, vol. 21, no. 4, 1 July 1991 (1991-07-01), pages 777-789, XP000263601 the whole document	7
A	HINKEL R ET AL: "AN APPLICATION FOR A DISTRIBUTED COMPUTER ARCHITECTURE- REALTIME DATA PROCESSING IN AN AUTONOMOUS MOBILE ROBOT" INTERNATIONAL CONFERENCE ON DISTRIBUTED COMPUTING SYSTEMS, SAN JOSE, JUNE 13 - 17, 1988, no. 1988, 13 June 1988 (1988-06-13), pages 410-417, XP000040240 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS the whole document	5-8

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 99/16078

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
DE 3536974	A	23-04-1987	NONE		
US 5622236	A	22-04-1997	JP 6149350	A	27-05-1994
EP 0786229	A	30-07-1997	JP 9201320	A	05-08-1997
			JP 10113318	A	06-05-1998
			AU 1228897	A	31-07-1997
			CA 2195891	A	26-07-1997
			CN 1165645	A	26-11-1997
US 5613261	A	25-03-1997	JP 7281752	A	27-10-1995

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

16

Applicant's or agent's file reference CM1831LM/KL		FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US99/16078	International filing date (day/month/year) 16/07/1999	Priority date (day/month/year) 20/07/1998	
International Patent Classification (IPC) or national classification and IPC G05D1/02			
Applicant THE PROCTER & GAMBLE COMPANY et al.			

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 8 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☒ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 24/01/2000	Date of completion of this report 10.08.00
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Ferla, M Telephone No. +49 89 2399 2275



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US99/16078

I. Basis of the report

1. This report has been drawn on the basis of (*substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.*):

Description, pages:

1-19 as originally filed

Claims, No.:

1-11 as originally filed

Drawings, sheets:

1/3-3/3 as received on 02/11/1999 with letter of 10/09/1999

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

4. Additional observations, if necessary:

III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
☒ claims Nos. 10,11.

because:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/US99/16078

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 10,11 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the said claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2,4-9
	No:	Claims	1,3
Inventive step (IS)	Yes:	Claims	
	No:	Claims	2,4-9
Industrial applicability (IA)	Yes:	Claims	1-9
	No:	Claims	

2. Citations and explanations

see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US99/16078

General matters

1. The following documents are mentioned below:

D1: DE 3 536 974 (A)

D2: US 5 613 261 (A)

D3: SEKIGUCHI M. ET AL.: "Behavior control for a mobile robot by multi-hierarchical neural network" Proceedings of the International Conference on Robotics and Automation, Scottsdale, May 15 - 19, 1989, vol. 3, 15 May 1989 (1989-05-15), pages 1578-1583, XP000044339 Institute of electrical and Electronics Engineers

Concerning section III

1. The application does not meet the requirements of **Article 6 PCT** because claims 10 and 11 are not clear. In fact, it is noted that listing various types of materials adapt to be used in a process can not be considered as a method step.

Concerning section V

1. The present application does not meet the requirements of **Article 33 (2) PCT** because claims 1 and 3 are not new for the following reasons:

1.1 Concerning claim 1, it is noted that document D1 discloses a self-propelled cleaning robot (see Abstract) whose movement on the surface to be treated is controlled according to the signals received both from navigation sensors (4, 4') and from detectors of the deposited material (23, 23'). The robot described in D1 has all the features of claim 1, as listed hereinafter:

- a traction mechanism (11, 11', 12, 12') (see, column 7, lines 54-56);
- means for controllably depositing a fluent (see, column 5, lines 17-27);
- navigation sensors (23, 23', 4, 4') (see, column 7, lines 64-67 and column 8, lines 20-25);

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US99/16078

- detectors (23, 23') of the presence of material on the surface (see, column 7, lines 56-59);
- a control system (3) (see, from column 7, line 59 to column 8, line 11).

It is noted that although document D1 does not mention explicitly the presence of a power supply on the robot this feature is obviously present in any electrical apparatus.

- 1.2 Concerning the novelty of claim 3 when dependent on claim 1, it is noted that the robot disclosed in D1 comprises two sensors (23, 23') for detecting the edge of a section of previously deposited material (see, from column 7, line 64 to column 8, line 4). Therefore claim 3 is not new.

2. The application does not meet the requirements of **Article 33(3) PCT** because the subject-matter of independent method claim 9 does not involve an inventive step. The reasons are the following:

- 2.1 Document D1, which is considered to represent the most relevant prior art, discloses a method for cleaning a surface using an autonomous, self-propelled and depositing-sensing robot (see, point 1.1 of this Section).

Therefore the subject-matter of claim 9 differs from the known method only in that the feature according to which the robot controls the deposition rate of the fluent is explicitly mentioned in the claim.

- 2.2 However, it is noted that this is a conventional feature of most cleaning machines (see, document D2, column 3, lines 28-45) where the operator or the control system itself can vary the deposition rate of the fluent according, for example, to the surface type and its degree of dirty.

- 2.3 The skilled person would therefore regard it as a normal option to include this feature in the robot described in D1 thus arriving at the subject-matter of claim 9, without the exercise of inventive skill.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US99/16078

3. Furthermore, dependent claims 2 and 4-8 do not appear to contain any additional features which, in combination with the features of any claim to which they refer, involve an inventive step for the following reasons:

- 3.1 Concerning claim 2, it is noted that the robot disclosed in D1 comprises different types of sensors (mechanical, optical and acoustic) for providing collision detection (see, column 6, lines 10-17).

Therefore the subject-matter of claim 2 differs from the one disclosed in D1 only in that these collision sensors are arranged on a peripheral sensor ring. However, this supplementary feature is merely related to the circular geometry of the claimed robot and the skilled person would regard it as a normal design procedure to place the collision detection sensors on the periphery of the robot's body independently of its particular shape without the exercise of inventive skill.

- 3.2 Concerning claim 4, it is noted that D1 mentions different types of detectors such as conductive meters (see, column 7, lines 58-59), moisture or radiation detectors (see, column 5, lines 24-30) suitable to be used for detecting the section of deposited material.

Therefore, the subject-matter of claim 4 differs from the robot of D1 only in that also some reflectivity meters are provided as detectors.

However, it is noted that reflectivity sensors and radiation sensors belong to the same class of detectors based on the same physical principle of detecting the light emitted by a body.

Moreover, it is also noted that the choice of detectors to be mounted on the robot consist merely in a selection amongst the conventional types of sensors available on the market in accordance with technical and economical constraints which the skilled person would normally conduct without the exercise of inventive skill.

- 3.3 Concerning claim 5, it is noted that document D3 discloses a self-propelled robot whose control system has the structure of a multi-hierarchical neural network for dealing with both higher-level and lower-level functions (see, section 3.2., first paragraph on page 1580 and first paragraph on page 1581). Therefore, the skilled person would consider the possibility of employing this

hierarchical architecture for the control system of document D1, obtaining the advantages described in D3 (see, section 1., second paragraph on page 1578 and section 3.2., last paragraph on page 1581), thus arriving at the subject-matter of claim 5.

- 3.4 Concerning claims 6, 7 and 8, it is noted that they merely specify conventional features typical of neural networks control; for example, a traction mechanism is normally connected via a bus to its controller which receives signals from all the devices involved in determining its behaviour (claim 6) and arbitration is also normally applied when dealing with multiple behaviour outputs from a neural network (claim 7). Therefore, the features disclosed in claims 6, 7 and 8 can be regarded as the result of implementing a control system using neural networks in the robot of document D1, thus falling in the possibility which a skilled person would consider as explained in the previous point 3.3.

Concerning section VII

1. The two-part form according to **Rule 6.3 (b) PCT** appears to be appropriate for any independent claim. The preambles should be based on document D1 as nearest prior art. It is noted that the features known from D1 appear in the present written opinion in Section V under point 1.1.
2. Documents D1, D2 and D3 should be referred to in the description as representing the nearest prior art (**Rule 5.1 (a) (ii) PCT**).
3. The following minor errors are also noted:
 - the symbol "[SPEC0516]" used to indicate the grades of rotations throughout the description and in the claims (see, for example, page 4, line 4 and page 20, claim 2) should be replaced by the appropriate symbol "°";
 - page 4, line 12: the statement "the robots subsequent angle..." should read "the robot's subsequent angle...";
 - according to the requirements of **Rule 11.13(I) PCT** reference signs not appearing in the drawings shall not appear in the description, and vice versa. This requirement is not met in view of the reference signs 1 (chassis) and 2

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/US99/16078

(body);

- according to the requirements of **Rule 11.13(m) PCT** the same feature shall be denoted by the same reference sign throughout the application. This requirement is not met in view of the use of the reference sign 12 in figure 1, where it seems to indicate both the control system placed over the traction mechanism and a structural detail (at the bottom of the figure between reference signs 20 and 4). It is noted that this lower reference sign 12 could probably be a "1,2" indicating the chassis and the body, thus solving also the previous point;
- page 15, line 16: the term "subsumtion" should be corrected, i.e. "subsumption".

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

REED, T., David
The Procter & Gamble Company
5299 Spring Grove Avenue
Cincinnati, OH 45217-1087
ÉTATS-UNIS D'AMÉRIQUE

RECEIVED
FEB 20 2000
P2863912-104

Date of mailing (day/month/year) 14 February 2000 (14.02.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference CM1831LM/KL	
International application No. PCT/US99/16078	International filing date (day/month/year) 16 July 1999 (16.07.99)

1. The following indications appeared on record concerning:

☒ the applicant ☒ the inventor ☐ the agent ☐ the common representative

Name and Address	State of Nationality	State of Residence
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address JAMIESON, David McCrory 4 The Orchard Hepscott Northumberland NE61 6HT United Kingdom	State of Nationality GB	State of Residence GB
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

3. Further observations, if necessary:

JAMIESON, David McCrory has been added as inventor/applicant for the US only.

4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned
☐ the International Searching Authority ☐ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer V. Gross
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
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From the INTERNATIONAL BUREAU

To:

REED, T., David
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ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year) 14 February 2000 (14.02.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference CM1831LM/KL	
International application No. PCT/US99/16078	International filing date (day/month/year) 16 July 1999 (16.07.99)

1. The following indications appeared on record concerning:

☒ the applicant ☒ the inventor ☐ the agent ☐ the common representative

Name and Address	State of Nationality	State of Residence
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address MANCEL, Claude, Paul Avenue Bellevue 115 B-1410 Waterloo Belgium	State of Nationality FR	State of Residence BE
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

3. Further observations, if necessary:

MANCEL, Claude, Paul has been added as inventor/applicant for the US only.

4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned
☐ the International Searching Authority ☐ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer V. Gross
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

REED, T., David
The Procter & Gamble Company
5299 Spring Grove Avenue
Cincinnati, OH 45217-1087
ÉTATS-UNIS D'AMÉRIQUE

Date of mailing (day/month/year) 14 February 2000 (14.02.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference CM1831LM/KL	
International application No. PCT/US99/16078	International filing date (day/month/year) 16 July 1999 (16.07.99)

1. The following indications appeared on record concerning:

☒ the applicant ☒ the inventor ☐ the agent ☐ the common representative

Name and Address

State of Nationality

State of Residence

Telephone No.

Facsimile No.

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☐ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address

STODDART, Barry
364 Durham Road
Low Fell
Gateshead NE9 5AP
United Kingdom

State of Nationality

GB

State of Residence

GB

Telephone No.

Facsimile No.

Teleprinter No.

3. Further observations, if necessary:

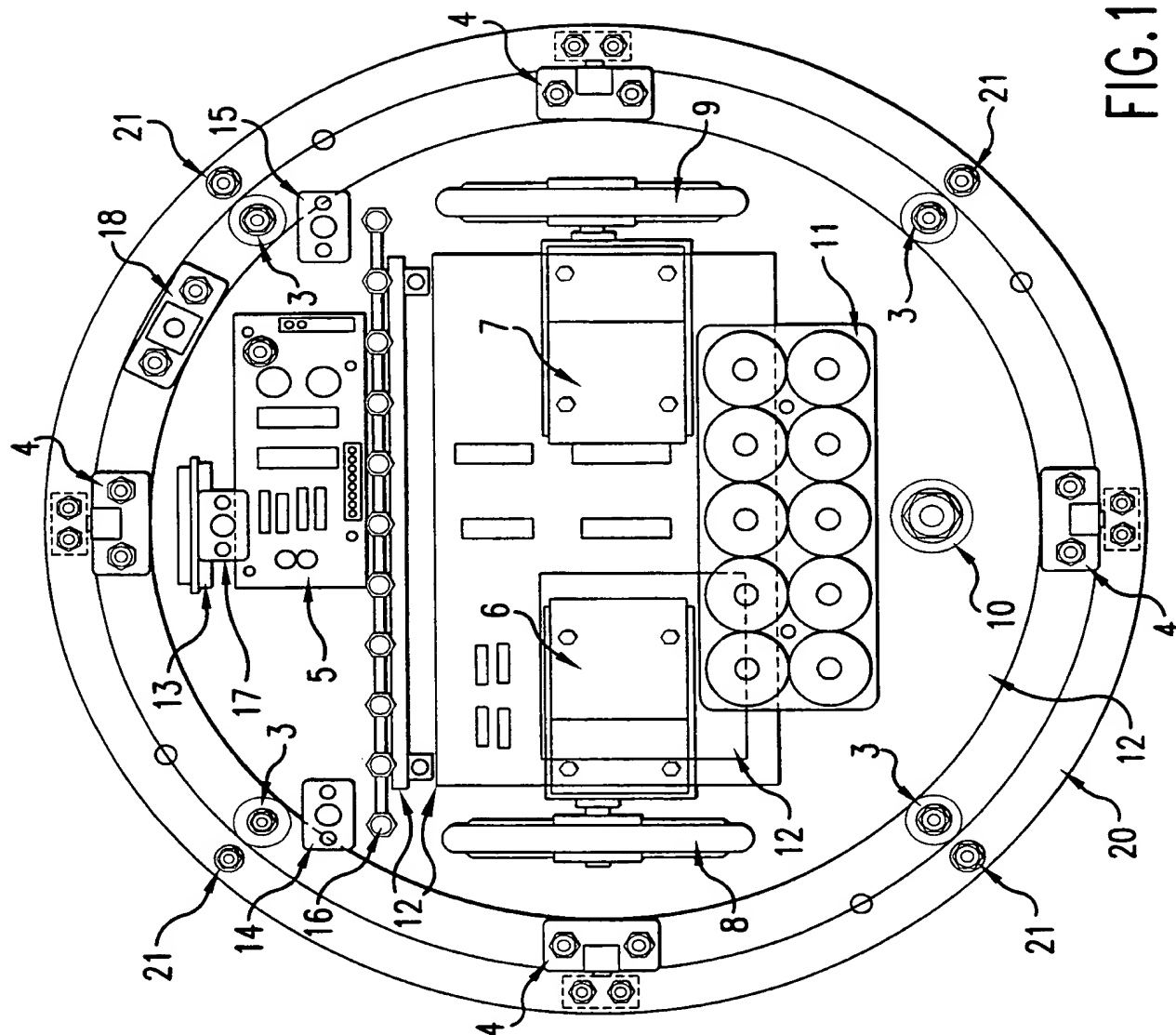
STODDART, Barry has been added as inventor/applicant for the US only.

4. A copy of this notification has been sent to:

☒ the receiving Office ☒ the designated Offices concerned
☐ the International Searching Authority ☐ the elected Offices concerned
☐ the International Preliminary Examining Authority ☐ other:

<p>The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland</p> <p>Facsimile No.: (41-22) 740.14.35</p>	<p>Authorized officer</p> <p>V. Gross <i>V. G.</i></p> <p>Telephone No.: (41-22) 338.83.38</p>
------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------

Patented
AT 33, 44, 45



2/3

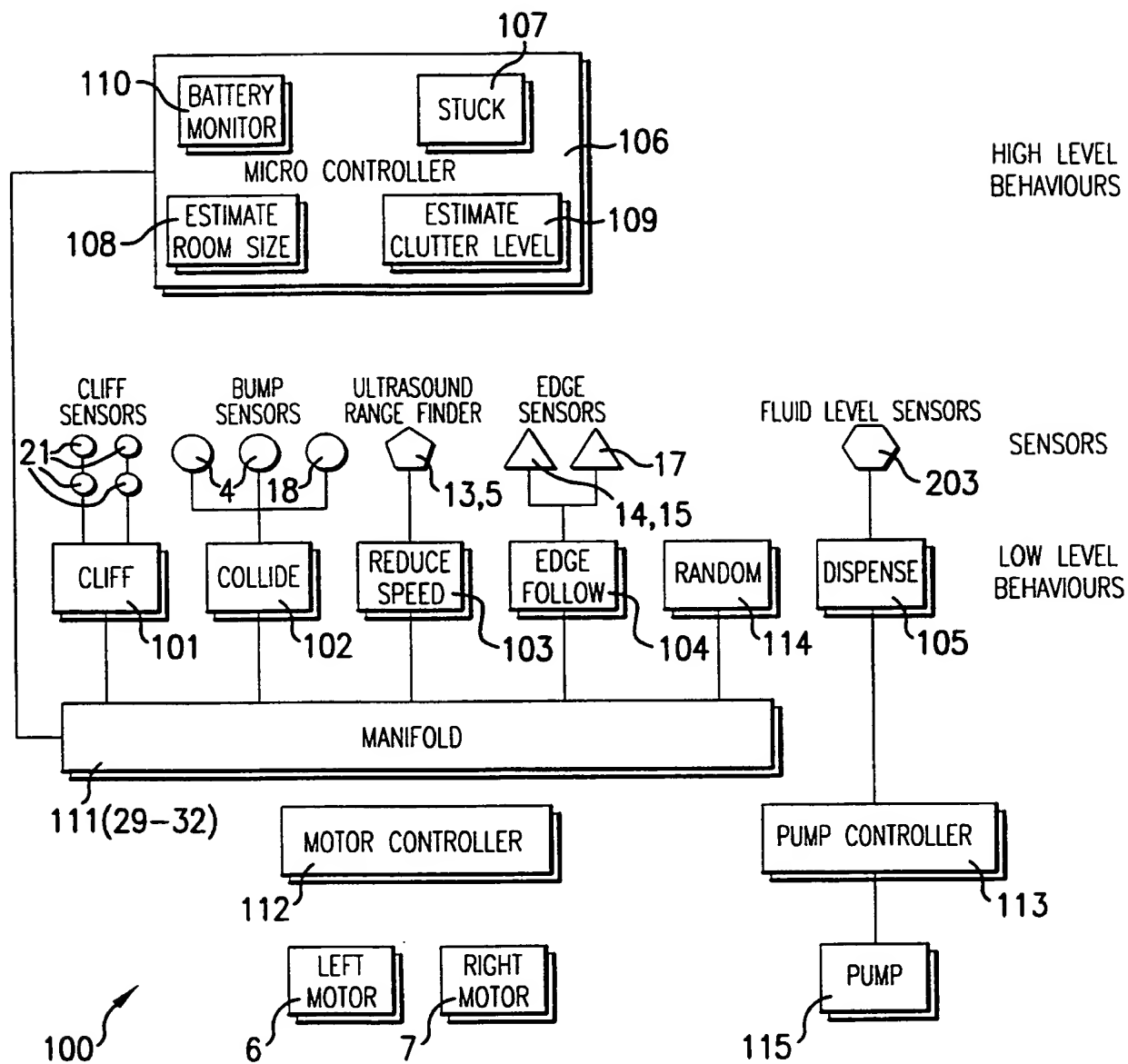


FIG.2

3/3

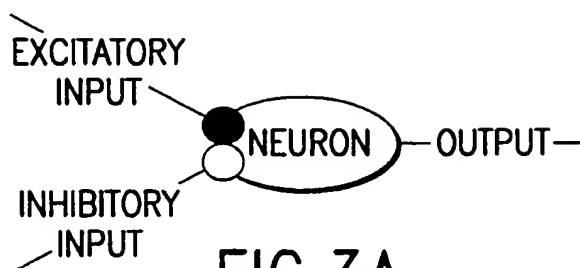


FIG.3A

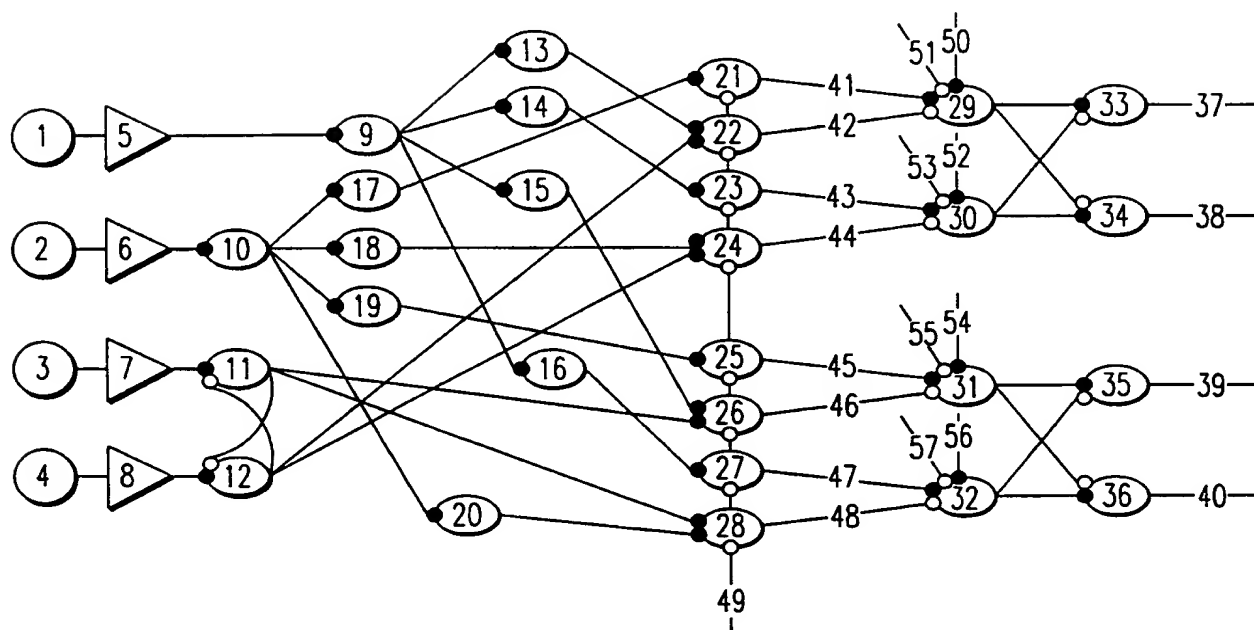


FIG.3B

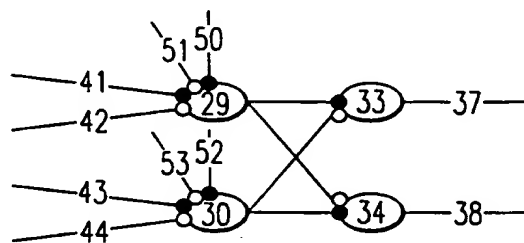


FIG.3C